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# The Role of Mass Media in Adolescents’ Sexual Behaviors: Exploring the Explanatory Value of the Three-Step Self-Objectification Process

**ABSTRACT**

The current longitudinal study ($N$ = 730) explored whether the three-step process of self-objectification could explain the influence of sexual media messages on adolescents' sexual behaviors. A structural equation model revealed that reading sexualizing magazines (time 1) was related to the internalization of appearance ideals and self-objectification (time 2). In turn, the internalization of appearance ideals was positively associated with body surveillance and self-objectification (all at time 2). Self-objectification was also positively associated with body surveillance (all at time 2). Lastly, body surveillance (time 2) positively related to the initiation of French kissing (time 3), whereas self-objectification (time 2) positively related to the initiation of sexual intercourse (time 3). No significant relationship was observed for intimate touching. The discussion focuses on the explanatory role of self-objectification in media effects on adolescents' sexual behaviors.

**KEY WORDS**: adolescence, media, self-objectification, sexuality, sexual behavior

# The Role of Mass Media in Adolescents' Sexual Behaviors: Exploring the Explanatory Value of the Three-Step Self-Objectification Process

## INTRODUCTION

The initiation, exploration and enjoyment of sexual behaviors is a critical and normative aspect of adolescent development (Tolman & McClelland, 2011). The average age at which American and Western-European adolescents initiate sexual intercourse is between 17 and 18 years (Avery & Lazdane, 2008; Centers for Disease Control and Prevention, 2006). The significant progress in the acquisition of sexual experiences between the ages of 12 and 18 is a component of an adolescent's developing sexual identity, which is determinative for his or her current and future involvement in healthy and emotionally satisfying sexual relationships (Tolman & McClelland, 2011). Scholars engaged in research on body image (Fredrickson & Roberts, 1997) and effects of the media (Ward, 2003) have raised concerns regarding how this developing sexuality may be adversely affected. The authors refer to associations between self-objectification or body surveillance and high-risk sexual activities, such as the early involvement in sexual intercourse and decreased use of condoms (Fredrickson & Roberts, 1997; Pearson, Kholodkov, Henson, & Impett, 2012). The authors also refer to associations between exposure to (sexual) media content and earlier involvement in or higher levels of sexual (risk) behavior (Ward, 2003).

Recently, research on body image and research on sexual media has been connected by evidence indicating that the exposure to sexual media triggers a multidimensional process of self-objectification. In this process, sexual media use affects, first, the internalization of appearance ideals and self-objectification; second, sexual media use is indirectly related to self-objectification through internalization, and, third, sexual media use is associated with body surveillance through internalization and self-objectification (Vandenbosch & Eggermont, 2012). In the current study, we aim to advance this line of inquiry by examining

whether the relationship between media exposure and this multidimensional process of self-objectification can explain the reported effect of media use on sexual behavior. The present study aims to test this question by using three-wave panel data that were collected from 730 adolescents.

This study responds to a call for more longitudinal studies to test the proposed mechanisms of the effects of sexual media (Martino, Collins, Kanouse, Elliot, & Bery, 2005) and focuses on the developmentally high-risk group of adolescents rather than college students (Eggermont, 2006). Furthermore, consistent with our focus on adolescents, the study explores the relationship between media exposure and the initiation of French kissing, intimate touching and sexual intercourse. This aim relates to the current scholarly interest in other sexual behaviors than the initiation of sexual intercourse and thus acknowledges that sexual behavior is more diverse (Impett, Schooler, & Tolman, 2006; Tolman & McClelland, 2011). Lastly, the study's primary contribution relates to organizing knowledge derived from the fields of psychology, communication sciences, cultural studies, sociology and sexual science (Fredrickson & Roberts, 1997; Moradi & Huang, 2008; Pearson et al., 2012; Vandenbosch & Eggermont, 2012; Ward, 2003) into a comprehensive model to increase scholarly knowledge on the manner in which media may affect adolescents' developing sexuality. Understanding these mechanisms is fundamental for future theory building and, from a more practical perspective, the identification of factors that may advance healthy sexual development.

**The Effects of Media on Adolescents' Sexual Behaviors**

The relationship between media and adolescent sexual behavior has been the subject of considerable scholarly inquiry. This research interest has been partially fueled by adolescents' regular, if not daily, consumption of sexual media content (Ward, 2003). One study reported that 70% of the 20 most popular adolescent television programs feature sexual

messages (Kunkel et al., 2007). Another study on primetime programs showed that 20% of these programs referred to precursory behaviors, such as French kissing and intimate touching, and 12% to sexual intercourse (Farrar et al., 2003). The significant presence of sexual media in adolescents' lives is in contrast to scholars' qualification of media as a potentially harmful sexual socialization agent (Brown et al., 2005; Brown & L'Engle, 2009). Various content analyses have described the context in which sexual behaviors occur as recreational, uncommitted and gender stereotypical with a strong emphasis on the physical attractiveness of characters (APA, 2007; Aubrey & Frisby, 2011; Ward, 1995). Objectifying idealized female and male bodies in sexual messages is prevalent in men's and pornographic magazines, fashion magazines, television programs and music videos, whereas attention to the risks and responsibilities of sexual activities is largely absent (Aubrey & Frisby, 2011; Farrar et al., 2003; Kim et al., 2007; Vandenbosch et al., 2013).

The biased nature and frequency of sexual activities in popular media warrant the media's possible contribution to adolescents' initiation of sexual activities at an earlier age as their peers (Ward, 2003), which, in turn, has been related to adversarial physical and mental health consequences, such as teenage pregnancy, sexually transmitted diseases, and lower relationship quality (Davis & Lay-Yee, 1999; Jakobsen, Rise, Aas, & Anderssen, 1997, Kotchick, Shaffer, Miller, & Forehanda, 2001; O'Donnell et al., 2001). Overall, media studies have supported the effect of sexual content on sexual behavior across different types of media and among both adolescent boys and girls (e.g., L'Engle, Brown, & Kenneavy, 2006). Longitudinal research has reported that exposure to sexual television content (Collins et al., 2004) and sexually explicit media (Brown & L'Engle, 2009) predicts an earlier initiation of sexual intercourse and non-coital sexual activities during the subsequent year. Exposure to sexual content in music videos, movies, television, and magazines accelerated white adolescents' acquisition of sexual experiences (Brown, L'Engle, Pardun, Guo,

Kenneavy, & Jackson, 2006). Studies have also demonstrated that watching sexual television content increased the risk of a sexually transmitted disease one year later (Wingood et al., 2003) and pregnancy three years later (Chandra et al., 2008).

This consistent support for the influence of sexual media on adolescents' earlier or more frequent involvement in sexual behaviors emphasizes the importance of understanding how and why these effects occur. These effects have traditionally been explained by referring to cultivation theory and social cognitive theory (e.g., Brown & L'Engle, 2009). Although these theories provide valuable explanations for the effect under scrutiny, research has seldom subjected the proposed mediators or explanatory processes to a robust empirical test. Only three longitudinal studies of sexual behavior have empirically examined the underlying processes, identifying mediators, such as self-efficacy perceptions (Martino et al., 2005), openness toward sexual intercourse (L'Engle & Jackson, 2008) and a perceived pressure to have sex (Bleakly, Hennessy, Fishbein, & Jordan, 2011). More recently, successful efforts have been conducted to extend or develop more specific theories, such as Ward's model of the media's contribution to sexual socialization (2003). These theories have however not addressed the potentially important role of the "body", which occupies a central place in both sexual media content and sexual behavior. Following the current line of theoretical extension (e.g., Kim et al., 2007) and initial efforts to systematically investigate theoretical mechanisms (e.g., Martino et al., 2005), the present study aims to propose and test whether the three-step process of self-objectification may explain how media affect the sexual conduct of adolescents.

**The Self-Objectification Process, Media and Adolescents' Sexual Behavior**

In response to a wide range of feminist and psychological studies (e.g., Bartky, 1990; Blazer, Kessler, McGonagle, & Swartz, 1994), Frederickson and Roberts (1997) proposed the objectification theory and McKinley and Hyde (1996) the objectified body consciousness

theory. Both theories, though independently developed, created the basis for a new field of research that centered on the practice of treating individuals as (sexual) bodies while ignoring their personalities. This practice is referred to as "sexually objectifying" (Frederickson & Roberts, 1997), or "sexualizing" (APA, 2007), and is expected to trigger self-objectification. Self-objectification is the tendency to objectify one's own body and has been considered to be an important factor in health consequences, such as depression, eating disorders and sexual dysfunction, all of which disproportionally affect Western societies (Calogero, Tantleff-Dunn, & Thompson, 2011; Frederickson & Roberts, 1997). The practice of sexualization may be encountered in social interactions, such as situations in which individuals gaze at someone's body, and during media exposure, such as the exposure to media characters who are presented as decorative objects in music videos. Although objectification theory was originally proposed to explain the consequences of the sexualizing experiences of women, scholars recently have successfully applied the tenets of the theory to men (Moradi & Huang, 2008).

In the body of research that has emerged from this theoretical framework, self-objectification has been interpreted as self-objectification as conceptualized by Noll and Fredrickson (1998), body surveillance or a three-step process of self-objectification. Self-objectification has been described by Noll and Fredrickson (1998) as an individual's evaluation of the relative importance of body attributes, whereby observable, appearance-based attributes are considered to be more important than competence-based attributes. Other scholars followed the objectified body consciousness theory and addressed "self-objectification" as body surveillance, referring to a continuous monitoring of one's own appearance (McKinley & Hyde, 1996). Recently, Moradi and Huang (2008) proposed to combine both types of body objectification and added the internalization of appearance ideals as a third component of the process of self-objectification. This internalization refers to the

extent to which an individual considers the societal norms of appearance to be appropriate standards for his or her own appearance (Thompson & Stice, 2001). Roberts (2012), one of the founders of objectification theory, has also acknowledged the necessity for research to include all three components.

Vandenbosch and Eggermont (2012) were the first to test the theoretically proposed order of the so-called three-step process of self-objectification. Consistent with theoretical assumptions (Calogero et al., 2011; Moradi & Huang, 2008; Roberts, 2012), their results suggested that a sexualizing experience may trigger self-objectification, both directly and through the internalization of appearance ideals. In turn, internalization and self-objectification, both of which are described as cognitive components of the three-step process, have been demonstrated to affect the behavioral component of body surveillance. In short, recent theoretical and empirical evidence supports the combination of internalization, self-objectification, and body surveillance into one conceptual process. The current study therefore will consider self-objectification as a three-dimensional process.

In the literature on objectification, Western media have been criticized as being one of the most important (and therefore the most examined) factors in a culture of objectification and sexualization. Numerous content analyses have justified this criticism by demonstrating how young characters' personalities are disregarded in sexual messages and how their unrealistic, ever youthful appearances are celebrated (e.g., APA, 2007; Vandenbosch et al., 2013). Research has reported relationships between the use of such sexualizing media and the internalization of appearance ideals, self-objectification, and body surveillance. For instance, Tiggemann's (2005) studies of body dissatisfaction have demonstrated that the media teach adolescents about societally approved appearance ideals. Longitudinal and experimental studies have also reported associations between exposure to sexualizing media and both self-

objectification (Aubrey, 2006; Harrison & Fredrickson, 2003) and body surveillance (Aubrey, 2006; Vandenbosch & Eggermont, 2012).

One of the areas in which self-objectification is theorized to structure the relationship between the self and the body is sexuality. Internalization, self-objectification and body surveillance all incorporate a tremendous focus on one's own appearance. This intense emphasis on appearance may produce a so-called "silencing" of other, non-appearance related needs and goals (Impett et al., 2006; Tolman & McClelland, 2011). Adolescents' perceptions of their own body as a sexualized object of appearance may enhance a more physically oriented view of sexuality and decrease the perceived importance of a warm, intimate relationship for having sexual intercourse (Fredrickson & Roberts, 1997). This reasoning has been corroborated by recent empirical evidence. One study reported a positive relationship between young men's increased orientation toward their own appearance and the number of sexual risk behaviors (Gillen, Lefkowitz, & Shearer, 2006). Among young women (Littleton, Breitkopf and Berenson, 2005), body surveillance predicted inconsistent condom use and multiple sex partners. Body objectification also resulted in a decrease in adolescent girls' sexually protective behaviors (Impett et al., 2006) and stronger feelings of regret regarding their first experiences with sexual intercourse (Hirschman, Impett, & Schooler, 2006). A two-year longitudinal study (Pearson et al., 2012) reported a higher likelihood among high self-objectifying girls to initiate sexual intercourse.

**The Current Study**

Although no study has addressed the meditating role of the three-step process of self-objectification in the effect of sexual media on sexual behavior, a multidisciplinary organization of several pieces of evidence suggests that such mediation may occur. Research suggests that exposure to sexualizing media increases both the three-step process of self-objectification and sexual behavior (e.g., Collins et al., 2004; Vandenbosch & Eggermont,

2012). Additionally, the literature has argued that within these media effects, sexual behavior can be explained by components of the self-objectification process (Fredrickson & Roberts, 1997; Gillen et al., 2006; Impett et al., 2006).

Applying such insights to adolescents' everyday lives suggest that they may learn about the prevailing appearance standards and the related appearance-based attributes while consuming their favorite (sexual) media. Adolescents are supported to apply this "cultural" knowledge to their own appearance and regularly ensure that their own body complies with the internalized appearance standards. Together, this manner of structuring the relationship between their self and body may play a role when discovering their own sexuality. The objectified focus on their own physical being may cause adolescents to address romantic situations from a similar perspective, resulting in an increased involvement in (recreational) sexual behaviors and disregard for the intimacy, risks and responsibilities that are associated with these new experiences. In summary, the current study argues that the three-step process of internalization, self-objectification and body surveillance may be an explanatory mechanism for the positive relationship between exposure to sexualizing media and the sexual behavior of adolescents. Figure 1 illustrates our reasoning:

[Figure 1 here]

The proposed model will be examined by focusing on one particular type of media, namely, magazines. Objectification scholars have described magazines as sexualizing (APA, 2007), and sexual media scholars have proposed that magazines are influential sexual socialization agents (e.g., Brown et al., 2006). Furthermore, the present study will account for the possible influence of body-mass index (BMI), age, and country of origin given that research has demonstrated that a higher BMI (Gillen et al., 2006), to have originated from a non-Western country (Vandenbosch & Eggermont, 2013) and being older (L'Engle et al., 2006) are associated with higher levels of sexual behavior as well as with different levels on

the three-step process of self-objectification (Aubrey, 2006; Knauss, Paxton, & Alasker, 2008; Moradi & Huang, 2008; Harrison & Fredrickson, 2003). Lastly, preliminary analyses are warranted to test for the possible moderating role of gender given that research within the fields of sexual media effects and body image has indicated possible gender differences (Moradi & Huang, 2008).

## METHOD

### Sample and Participant Selection

A three-wave panel study with an interval of six months was conducted among 12- to 18-year-old adolescents. Due to the relatively rapid sequence of developmental changes that occur during puberty (Mul, 2004), a six-month interval was established with the expectation that it would allow for a more comprehensive understanding of developmental trajectories. Moreover, prior research has supported the validity of a six-month time interval when testing longitudinal models of processes that may mediate the relationship between media use and adolescents' sexuality (Peter & Valkenburg, 2008; 2009). Approval for the survey was granted by the institutional review board of the host university. Informed consent was obtained from the school head, which is customary in [country deleted]. In March 2010, a quantitative survey was conducted in 12 schools that were selected from those who agreed to participate from different regions of [country deleted]. Different schooling levels and ages were selected. All of the students who were present in the 12 schools during the researchers' school visits completed paper surveys. The students were informed that the goal of the study was to investigate their leisure habits. To increase confidentiality, the researchers ensured that the students were unable to discuss or view the answers of their peers. Additionally, confidentiality was ensured by requesting the students to write their identification data on separate forms and by guaranteeing that their survey answers would be processed separately from their identification data. In September 2010, a second quantitative survey was

conducted in the 12 schools that had participated in March. Lastly, in March 2011, a third quantitative survey was organized in the 12 schools. Based on the identification forms from waves 1, 2 and 3, the respondents were tracked over time. After the data collection, each respondent was assigned a unique code so that any identifying data could be deleted before the data were processed.

A total of 1,504 students completed the questionnaire at baseline, 1,426 students participated in wave 2 and 1,433 students participated in wave 3. A total of 730 students completed the questionnaires for all of the waves (48.53%). The final combined sample of all of the waves consisted of 730 students with a mean age of 15.41 years ($SD$ = 1.45); 55.9% were boys. The majority of the sample (95.8%) was born in [country deleted], and only 4.2% of the respondents were born in another country. Furthermore, the majority of the sample (64.5%) consisted of adolescents who were following a general educational program, which is representative of the overall [country deleted] school population (62.6%; Department of Education, 2011).

The differences were explored between the adolescents who participated in one wave ($N$ = 774) and those who participated in all of the waves ($N$ = 730) with regard to all of the relevant variables (all at time 1). A set of $\chi^2$-tests revealed that the subjects who participated in only one wave were significantly more likely to be boys, $\chi^2$ (1) = 13.02, $p$ < .001 (55.2% vs. 44.8%), to have originated in another country, $\chi^2$ (1) = 7.57, $p$ < .001 (7.7% vs. 4.2%), and to have initiated French kissing, $\chi^2$ (1) = 4.66, $p$ < .05 (53.6% vs. 46.4%), intimate touching, $\chi^2$ (1) = 7.89, $p$ < .001 (56.9% vs. 43.1%), and sexual intercourse, $\chi^2$ (1) = 9.93, $p$ < .005 (59.2% vs. 40.8%) than were those who completed all of the questionnaires. Differences regarding age, BMI, exposure to sexualizing magazines, the internalization of appearance ideals, body surveillance and self-objectification were revealed by a MANOVA analysis using Pillai's Trace, $V$ = .02, $F$ (6, 1207) = 4.51, $p$ < .005, $\eta p^2$ = .02. ANOVAs indicated that

the adolescents who participated in only one wave scored lower on the internalization of appearance ideals ($M$ = 2.35, $SD$ = .86 vs. $M$ = 2.52, $SD$ = .87), $F$ (1, 1212) = 11.38, $p < .005$, $\eta p^2 = .01$, and body surveillance ($M$ = 2.92, $SD$ = .88 vs. $M$ = 3.10, $SD$ = .84), $F$ (1, 1212) = 12.99, $p < .001$, $\eta p^2 = .01$, than did adolescents who participated in all of the waves.

**Assessments and Measures**

**Control variables.** The participants rated their height and weight. By dividing the weight of the adolescents by their squared height, their BMI was calculated. Additionally, the adolescents indicated their country of origin (0 = [country deleted], 1 = *other country*) and age.

**Exposure to sexualizing magazines.** Using a 5-point scale (*(almost) never* (= 1) to *(almost) weekly* (= 5)), the participants indicated how often they read general "gossip" magazines, such as Dag Allemaal (a local version of People), fashion magazines, such as Elle, and men's magazines, such as P-magazine (a local version of Maxim). To attribute more weight to the magazines that were perceived as more sexualizing, we applied a procedure that was similar to that reported by Aubrey (2006) and Zurbriggen, Ramsey and Jaworski (2011). Initially, college students (9 men and 20 women) were trained to address the level of sexualization, which was described as a visual and thematic focus on the body and appearance in a sexualized manner (APA, 2007; Aubrey, 2006; Fredrickson & Roberts, 1997). We chose to train college students rather than adolescents as it may be problematic for adolescents to accurately address the level of sexualization because of their limited sexual experiences and cognitive skills (Ward, 2003). Following the training, the college students were requested to answer three questions on a 5-point scale for each type of magazine that was included in the adolescent survey (Zurbriggen et al., 2011). The questions focused on the frequency and intensity of sexualization and the familiarity of the college students with the type of magazine (for a further description, see Zurbriggen et al., 2011). The familiarity with

magazines was addressed to ensure that especially the ratings of those college students who are familiar with the this type of content determine the sexualization weight.

Based on the frequency, intensity and familiarity ratings, a four-step-procedure was followed to calculate a sexualization score for each magazine. First, the frequency, intensity and familiarity scores were multiplied for each magazine. Second, the total sum of the familiarity ratings of all of the college students was calculated for each magazine. Third, the weighted sexualization scores were calculated by dividing the product of frequency * intensity * familiarity (step 1) by the total sum of the familiarity ratings of that particular type of magazine (step 2). Fourth, the sum of the weighted sexualization scores was calculated for each type of magazine. The result of this procedure, i.e., a sexualization score for each type of magazine (.50 = gossip magazines; .60 = fashion magazines; and .72 = men's magazines) was used to weigh the adolescents' frequency ratings of their magazine reading. To estimate the degree to which the respondents were exposed to sexualizing magazines, we calculated their mean scores for the three selected types of sexualizing magazines.

**Self-objectification.** Self-objectification was measured using an adapted version of Noll and Fredrickson's original Self-Objectification Questionnaire (1998), for which prior research among adolescents has demonstrated its validity and reliability (Vandenbosch & Eggermont, 2012; 2013). The respondents were requested to evaluate the importance of 12 body attributes on a 10-point scale (*not at all important* (= 1) to *very important* (= 10)). Following Vandenbosch and Eggermont (2012), we performed principal component analyses using direct oblimin separately for boys and girls to extract one appearance-based factor and one competence-based factor.

For the adolescent girls, the appearance-based body attributes were physical attractiveness (factor loading = .78), coloring (.56), weight (.70), sex appeal (.73) and measurements (.66) (eigenvalue: 1.95; explained variance: 16.21%; $\alpha = .71$). The

competence-based body attributes were physical coordination (.51), stamina (.84), health (.53), physical fitness (.83), physical energy level (.77), muscular strength (.55) and muscle tone (.53) (eigenvalue: 3.85; explained variance: 32.10%; $\alpha = .82$). For the adolescent boys, the appearance-based factor (eigenvalue: 5.04; explained variance: 41.96%; $\alpha = .84$) included physical attractiveness (.84), coloring (.70), weight (.61), sex appeal (.84), measurements (.55), muscular strength (.69) and muscle tone (.71). The competence-based factor (eigenvalue: 1.59; explained variance: 13.26%; $\alpha = .85$) included stamina (.84), health (.75), physical fitness (.87) and physical energy level (.75). Physical coordination was removed given that its factor loading was less than .40. The difference between the mean scores of the newly created appearance- and competence-based factors addressed the estimated level of self-objectification (ranging from -9 to 9). Higher scores on this measure indicated higher levels of self-objectification.

**Body surveillance.** The questionnaire included the body surveillance subscale from the Objectified Body Consciousness Scale for Adolescents (Lindberg et al., 2006), the validity and reliability of which has been demonstrated by prior research (e.g., Grabe & Hyde, 2009; Lindberg et al., 2006). On a 5-point scale (*(almost) never* (= 1) to *(almost) always* (= 5)), the respondents evaluated four statements ($\alpha = .80$): "I often compare how I look with how other people look," "During the day, I think about how I look many times," "I often worry about whether the clothes I am wearing make me look good," and, "I often worry about how I look to other people."

**The internalization of appearance ideals.** For the Internalization subscale of the Sociocultural Attitudes Toward Appearance Scale (Thompson et al., 2003), the respondents used a 5-point scale ranging from *I totally disagree* (= 1) to *I totally agree* (= 5) to evaluate 9 items, such as, "I wish I looked like the models in music videos" and, "I try to look like the people on TV." The Internalization subscale has a demonstrated validity and test-retest

reliability among female college students (Thompson et al., 2003); however, research among adolescents has suggested that the scale must be adapted for reliability for younger respondents (Knauss, Paxton, & Alasker, 2008). Consistent with the findings of Vandenbosch and Eggermont (2012), the reliability tests in this study indicated that two items (i.e., "I compare my body to the bodies of TV and movie stars" and, "I compare my appearance to the appearance of TV and movie stars") reduced the alpha value. Subsequently, these two items were omitted, and a reliable 7-item scale remained ($\alpha$ = .93).

**The initiation of French kissing.** The respondents indicated whether they had ever French kissed (*no* = 0; *yes* = 1).

**The initiation of intimate touching.** The respondents indicated whether they had ever had touched the genitals of a partner (*no* = 0; *yes* = 1).

**The initiation of sexual intercourse.** The respondents indicated whether they had ever had sexual intercourse (*no* = 0; *yes* = 1).

## RESULTS

### Descriptive Statistics and Preliminary Analyses

The descriptive statistics are presented in Table 1. At baseline, the adolescents reported to occasionally read gossip (*M* = 2.14, *SD* = 1.20), fashion (*M* = 1.79, *SD* = 1.14) and men's magazines (*M* = 1.41, *SD* = .85). The mean level of self-objectification (*M* = -.81, *SD* = 1.64) indicated that the adolescents valued competence-based attributes higher than appearance-based attributes. Moreover, the mean levels of internalization (*M* = 2.52, *SD* = .87) and body surveillance (*M* = 3.10, *SD* = .84) were comparable to the results of other research of adolescents (Grabe & Hyde, 2009; Knauss et al., 2008). Furthermore, the majority of the adolescents indicated that they had previously French kissed (55.8%), whereas one-quarter of our sample had a certain degree of experience with intimate touching (26.0%). Lastly, 17.5% of the adolescents had previously initiated sexual intercourse.

Zero-order correlations further indicated significant relationships among consuming sexualizing magazines, internalization, self-objectification, body surveillance, French kissing, intimate touching and sexual intercourse (See Table 2).

**Hypothesized Model**

The model in Figure 1 was used to test the hypothesized effect on French kissing (model 1), intimate touching (model 2) and sexual intercourse (model 3). Given that one of the endogenous variables included in each model is dichotomous (French kissing / intimate touching / sexual initiation), the model was analyzed using Bayesian estimation (Arbuckle, 2010; Byrne, 2010). Bayesian estimation in AMOS assigns each unknown quantity a probability assumption using the Markov Chain Monte Carlo algorithm (MCMC) and estimates the parameter values, i.e., the posterior means and the 95% Bayesian credible intervals (Arbuckle, 2010). Sampling based on a MCMC algorithm is expected to provide stable parameter estimates (and to have drawn sufficient samples) when the convergence statistic is less than 1.002 (Arbuckle, 2010; Byrne, 2010). An additional indication of accurate parameter estimates is that each Bayesian standard error has a value lower than .05 (Spiegelhalter, Thomas, Best, & Lunn, 2003). All of the presented models met these assumptions with a convergence statistic of 1.001 and a Bayesian standard error for each parameter estimate that was lower than .03.

Each model controlled for the baseline values of the country of origin, age and BMI by employing these variables as predictors for all of the hypothesized endogenous variables. Prior values were also entered as control variables: internalization at wave 1 predicted internalization at wave 2; self-objectification at wave 1 predicted self-objectification at wave 2; body surveillance at wave 1 predicted body surveillance at wave 2; and sexual behavior at wave 1 / wave 2 predicted sexual behavior at wave 2 / wave 3. The inclusion of these control variables and prior values increased the complexity of our hypothesized model. As a

reduction of model complexity is highly recommended for Bayesian estimation (Arbuckle, 2010), we chose to analyze each sexual behavior separately and to use item parcels as indicators for the Likert scales that included more than three items (Peter & Valkenburg, 2008). Item parcels are expected to enable the prediction of stable parameters (Bandalos, 2002) and are less likely to violate the assumptions of multivariate normality that underlie the applied maximum likelihood estimation procedure (Russell, Kahn, Spoth, & Altmaier, 1998, p. 22). The item parcels were constructed based on the rank order results of the factor loadings of each item (i.e., principal component analysis) (Russell et al., 1998).

Prior to reporting the primary results, preliminary analyses were conducted to ensure that gender did not moderate the hypothesized effect of sexualizing magazines. Following a similar procedure as described by Peter and Valkenburg (2008), we entered the centered manifest variable of exposure to sexualizing magazines (W1), gender (W1) and the interaction term between the centered variables of exposure to sexualizing magazines (W1) and gender (W1). In addition to all of the direct paths from sexualizing magazines (See Figure 1), we added paths from gender and the newly created interaction term. All of the models indicated that the influences of sexualizing magazines at wave 1 on the internalization of appearance ideals at wave 2, self-objectification at wave 2, French kissing at wave 3, intimate touching at wave 3 and sexual intercourse at wave 3 were not moderated by gender.

The primary results are summarized in Figure 2. For clarity, the measurement details and control variables are not given. With respect to French kissing, the results indicated that the expected paths of reading sexualizing magazines at baseline to the internalization of appearance ideals (standardized direct effect mean = .12, 95% CI: .04 - .20) and self-objectification (direct effect = .41, 95% CI: .30 - .51) six months later were significant and positive. In turn, the internalization of appearance ideals at wave 2 (direct effect = .28, 95% CI: .21 - .35) and self-objectification at wave 2 (direct effect = .17, 95% CI: .10 - .24)

significantly predicted body surveillance at wave 2. The internalization of appearance ideals at wave 2 also predicted self-objectification at wave 2 (direct effect = .28, 95% CI: .21 - .35). These results thus confirm the three-step self-objectification process. With regard to sexual behavior, only body surveillance at wave 2 significantly predicted French kissing (direct effect = .15, 95% CI: .03 - .26).

Indirect effects were also examined by a bootstrap analysis (Arbuckle, 2010). Sexualizing magazines at wave 1 were observed to indirectly affect self-objectification at wave 2 (indirect effect = .03, 95% CI: .01 - .06) and body surveillance at wave 2 (indirect effect = .11, 95% CI: .06 - .15). The indirect path of sexualizing magazines at wave 1 to French kissing did not reach significance (indirect effect = .0, 95% CI: -.04 - .07). The internalization of appearance ideals at wave 2 also indirectly affected body surveillance at wave 2 (indirect effect = .15, 95% CI: .03 - .26) and French kissing at wave 3 (indirect effect = .05, 95% CI: .01 - .10). Self-objectification at wave 2 was also observed to indirectly affect French kissing at wave 3 (indirect effect = .02, 95% CI: .00 - .05). No other significant paths were observed.

Similar results regarding relationships between reading sexualizing magazines, internalization, self-objectification and body surveillance were observed for the model that predicted intimate touching at wave 3. Therefore, these results will not be reported in detail. With respect to the relationship with intimate touching, neither reading sexualizing magazines nor the three-step self-objectification process significantly predicted intimate touching at wave 3.

Again, similar results regarding the relationships between reading sexualizing magazines, internalization, self-objectification and body surveillance were observed for the model that predicted sexual intercourse at wave 3. The model also revealed that self-objectification at wave 2 significantly predicted sexual intercourse at wave 3 (direct effect =

.15, 95% CI: .05 - .26). Additionally, the indirect path of sexualizing magazines at wave 1 to sexual intercourse was significant (indirect effect = .03, 95% CI: .01 - .0317), whereas the indirect path of the internalization of appearance ideals at wave 2 to sexual intercourse at wave 3 through self-objectification did not reach significance (indirect effect = .0, 95% CI: -.04 - .03). No other significant relationships were detected.

## DISCUSSION

The current study aimed to increase multidisciplinary knowledge on the manner in which sexualizing media are related to adolescents' initiations of French kissing, intimate touching and sexual intercourse. The study thus contributed to the current theoretical framework in that it introduced the three-step process of self-objectification into research on the effects of sexual media. Moreover, the current study demonstrated associations (i) between media use and the three-step process of self-objectification and (ii) this process and adolescents' sexual behavior, both on a longitudinal basis. The results specifically indicated that exposure to sexualizing magazines related to the internalization of appearance ideals and self-objectification. In turn, the internalization of appearance ideals positively related to body surveillance and self-objectification. Self-objectification also related to body surveillance. Lastly, body surveillance positively related to the initiation of French kissing, whereas self-objectification positively related to the initiation of sexual intercourse. These results have several implications for the relationship between both self-objectification and adolescents' sexual behavior as well as between media use and adolescents' sexual behavior.

**The three-step process of self-objectification and sexual behavior.** Consistent with the small number of longitudinal studies of objectification and sexuality (e.g., Pearson et al., 2012), we observed relationships between the components of the self-objectification process and adolescents' sexual behavior. In this process, the internalization of beauty ideals was observed to play an indirect role by affecting body surveillance. Body surveillance and self-

objectification emerged as direct predictors of adolescents' engagement in French kissing and sexual intercourse, respectively. Following the recent three-step approach toward self-objectification in feminist literature, the current study of sexual behavior thus indicated that the different dimensions of how adolescents perceive their body are related to different sexual paths.

A general explanation for the association between self-objectification (and its components) and sexual behavior has traditionally been sought in the separation of one's body from one's personality, resulting in the "silencing" of other, non-appearance related needs and goals, such as the perceived importance of one's own sexual or romantic feelings for having sexual intercourse (Fredrickson & Roberts, 1997; Impett et al., 2006; Tolman & McClelland, 2011). The particular notion of silencing may explain the sexual path from self-objectification. More specifically, our study observed that self-objectifying adolescents had a higher likelihood of initiating sexual intercourse, whereas self-objectification was unrelated to French kissing or intimate touching. It appears that considering appearance-based body attributes, such as one's sex appeal, above competence-based attributes triggers adolescents' decision to engage in coital sex. This result suggests that self-objectification does not affect so much the gradual, stepwise acquisition of sexual experiences but rather immediately and directly affects engagement in more advanced sexual activities. A similar conclusion was suggested by the findings of Pearson et al. (2012) who reported that body objectification affected only the subsample of adolescent girls who had not been touched underneath their clothes at baseline. No effect was detected among adolescent girls who had previously participated in the latter explorative sexual behavior and thus appeared to follow a more gradual sexual path.

Together with the study of Pearson et al. (2012), our findings on the role of self-objectification in more advanced sexual behaviors may be important for research into the

prevention of sexual risk-taking given that it suggests a possible significant factor for intervention. Future research needs also to consider the possibility that the relationship between self-objectification and sexual intercourse is mediated or explained by other factors. For instance, research has shown that adolescents with an objectified self-concept show lower levels of sexual agency (Tolman, 1999; Ward & Vandenbosch, 2013). Similarly, media research has demonstrated negative relationships between (sexualizing) media use and sexual agency (Tolman, Kim, Schooler, & Sorsoli, 2007). Possibly, exposure to sexualizing media increases adolescents' levels of self-objectification, which, in turn, may decrease their levels of sexual agency. A high level of sexual agency among young people who strongly objectify themselves can lead them to have more sex. Because these adolescents feel they have no control over sexual situations, they may be more inclined to agree with a partner's proposition to have sexual intercourse.

The analyses of this study further revealed that only French kissing was predicted by body surveillance, whereas body surveillance did not affect intimate touching or full intercourse. One reason for this association may be that body surveillance, i.e., the habitual monitoring of one's own body, touches on body shame (Moradi & Huang, 2008), which has been demonstrated to direct adolescents to sexual behaviors that do not require the uncovering of their bodies (Schooler, Ward, Merriwether, & Caruthers, 2005). French kissing may "allow" adolescents to hide their naked body behind their styled clothing and thus appear to them as being "safe." This explanation, however, should also be reflected in a *negative* relationship between body surveillance and sexual behaviors that imply nudity, such as sexual intercourse, which was not observed in the current study (though this relationship was observed in the study of Schooler et al. (2005)). Therefore, the conclusion appears to be two-fold. First, examining the multidimensional three-step self-objectification process appears to have been valuable in that it revealed that the relationships between particular

components of the process and particular sexual experiences operate differently. Alternatively, the current study was the first to examine the relationships between separate sexual behaviors and components of the three-step self-objectification process. These results also shed new and unexpected light on the relationship between objectification and sexuality. Therefore, the results emphasize that additional research is necessary to better illuminate and explain how these relationships occur.

A more fundamental (although not novel) implication of the present study relates to what is meant by "sexual risks." Sexual activity during (early) adolescence has been associated with a variety of consequences for the mental and physical health of those involved. These adverse conditions are specifically linked with involvement in sexual risk behavior (Gillen et al., 2006; Hirschman et al., 2006; Impett et al., 2006; Littleton et al. 2005). However, the sexual behaviors discussed in the present study, including deep kissing, intimate touching, and sexual intercourse, are not in themselves risk behaviors. However, such "risk-free" behaviors may become harmful when they are *motivated* by particular perceptions, such as a biased view on one's body. The influence of sexual behavior on the well-being of those involved may not only be defined by the behavior itself but also by the motivation that underlies the behavior (Bay-Chen et al., 2012). In this view, Bay-Chen et al. (2012) framed the sexual exploration reported in the current study as a pseudo-empowerment of sexuality that may cause undesired sexual interactions. These authors consider sex as a highly ambivalent and complex process in which adolescents with a sexualized self-concept are at risk to engage in sexual intercourse to please the other participant, whereas they themselves may have a feeling of unpreparedness for sexual intimacy. In such a context, the sexual interaction may be an unsatisfactory and undesirable experience (Bay-Chen et al., 2012). This reasoning was also supported in the study of Hirschman et al. (2006), who observed that self-objectifying girls had more feelings of regret regarding their initial

experiences with sexual intercourse. In addition to the mental health risks that are associated with the above-scrutinized sexual outcomes, scholars have called sexual behaviors that are driven by self-objectifying perceptions risky for young people's physical health. More specifically, the self-objectifying factors that evoke these sexual behaviors have been demonstrated to inhibit favorable developmental outcomes given that they increase the number of sexual partners but decrease the use of sexual protection methods (Impett et al., 2006; Littleton et al. 2005).

In addition to this risk-focused perspective, future research should also consider the possibility that the study results on self-objectification and sexual behavior rather reflect developing norms, which are not always problematic. Exposure to sexualizing media is considered to be highly prevalent in adolescents' life (APA, 2007), and has been called an important sexual socialization agent (Ward, 2003). Moreover, exposure to sexualizing media may support adolescents' engagement in sexual behavior (e.g., Martino et al., 2005), though, this behavior may only be problematic for some adolescents; for instance, for adolescents with certain perspectives on sexual behavior and certain motivations to engage in this behavior.

Furthermore, the results on the process of self-objectification and sexual behavior point to two additional findings that deserve our attention. First, research exploring the moderating effects of differential sexual motivations may explain why intimate touching appeared to be not related to the three-step process of self-objectification. Possibly, intimacy- or relationship-oriented goals (Rostosky, Welsh, Kawaguchi, & Galliher, 1999) are more important motivations for initiating intimate touching which does not necessarily imply a sexual gratification. Intimate touching may be primarily considered by adolescents as expressing one's romantic feelings. These motivations may, subsequently, interact with the

multidimensional process of self-objectification and decrease or counter their impact on intimate touching.

Second, the relationships between the three-step process of self-objectification and sexuality appeared to be similar for boys and girls. Prior research has suggested that the objectification framework is applicable to both boys and girls, though, relationships have traditionally been expected to be stronger among girls (Moradi & Huang, 2008). Moreover, the emerging line of research on objectification and sexuality has so far largely neglected male samples (e.g., Calogero & Thompson, 2009; Steer & Tiggemann, 2008). The current study supports that the objectification theory is valuable for both boys and girls, and even suggests that the extent to which objectification constructs relate to each other, and to sexuality, is similar for boys and girls. Our findings thus warrant attention for boys' sexuality.

**Media and sexual behavior.** The current study aimed to further resolve the theoretically hypothesized and empirically supported relationship between media use and sexual behavior (Ward, 2003). This research aim was partially driven by the consensus among researchers that the current theoretical basis for explaining sexual media effects is too limited to explain sexual media effects (e.g., Collins et al., 2004). From this perspective and for various theoretical and empirical reasons, this study explored and supported the value of organizing multidisciplinary knowledge that was derived from studies of objectification, sexual development, and media effects into a comprehensive model for understanding the relationship between exposure to sexualizing media and adolescents' sexual behavior.

More specifically, the current study successfully introduced a new theoretical mechanism that may explain why exposure to sexual media increases adolescents' likelihood to engage in sexual behavior: Sexualizing magazines that emphasize attractive characters' recreational sexuality may relate to adolescents' sexual explorations through the three-step

process of self-objectification. The findings thus support the objectification theory's assumptions on media use, self-objectification and sexual development (Frederickson & Roberts, 1997). Moreover, the theoretical mechanism of self-objectification may also complement other, more traditional media theories. For instance, cultivation theory expects that the more that adolescents consume media, the more they endorse the promoted meta-narrative (Gerbner, 1998). Objectification theory interprets this narrative as a sexualizing narrative about sexualized bodies and appearance ideals, leading to the internalization of those ideals. Moreover, the objectification framework contributes to explaining how this narrative tends to be applied to one's self-concept (i.e., self-objectification and body surveillance) and how it impacts one's (sexual) behavior (APA, 2007; Roberts, 2012; Frederickson & Roberts, 1997). Additionally, the social-cognitive framework argues that media promote particular attitudes and behaviors by rewarding attractive role models (Bandura, 2001). Regardless of the validity of a direct imitation model, the present study works within the objectification framework to reveal that the rewarding of narrowly defined appearance ideals in a sexualizing context relates to adolescents' social cognition regarding their self-concept (i.e., the internalization of appearance ideals and self-objectification) and stimulates conduct that corresponds to this self-concept (i.e., body surveillance and sexual initiation) (APA, 2007; Frederickson & Roberts, 1997; Roberts, 2012).

Moreover, this new explanatory process may also clarify results that remain unexplained. Several authors found support for the association between exposure to sexual media and sexual behavior among white adolescents but not among black adolescents (e.g., Brown et al., 2006). In this view, Weekes (2002) suggested that black womanhood supports the "no-nonsense approach" or girls' refusals to be objects of male desire. Thus, although black models are also (heavily) sexualized in popular media content (APA, 2007; Vandenbosch et al., 2013), other socialization agents, such as "black sisters", may protect

black girls from engaging in self-objectification processes and the related sexual consequences. Future research should examine such moderation processes given that they suggest a valuable manner with which to prevent or diminish the negative consequences of sexualization.

**Limitations**. Although the findings of the present study provide a promising new perspective on sexual media effects, it should be acknowledged that the indirect effect of sexualizing magazines on adolescents' sexual behaviors was significant for the initiation of sexual intercourse but not French kissing. It is possible that the three-wave study design was too limited and that a four-wave study may have more rigorously tested the relationships between media use (wave 1), internalization (wave 2), self-objectification (wave 2), body surveillance (wave 3) and French kissing (wave 4). With respect to the limitation of the longitudinal design is the fact that half of the participating adolescents in wave 1 did not participate in all of the waves. More importantly, those who dropped out of the study were more likely to score higher on internalization, body surveillance and sexual behaviors. The present study may therefore underestimate the influence of the self-objectification process and sexualizing magazines on adolescents' sexual behavior; Moreover, the proportion of sexually active adolescents was lower in this sample than in previous research (e.g., Avery & Lazdane, 2008) leading us to question whether the reported relations would have been stronger in a more sexually active sample. Future research which takes these sampling and recruitment biases into account is necessary. Lastly, our study was limited by its focus on magazines. Future research may consider other forms of popular sexualizing media, such as social media (Vandenbosch & Eggermont, 2012) and television (Aubrey, 2006).

**Conclusion.** The results of this longitudinal study constitute a promising approach in the construction of a new integrative model of sexualizing media use and adolescent sexual development. This explanatory model supported longitudinal associations (i) between media

use and the three-step process of self-objectification and (ii) this process and adolescents' sexual behavior. The present study calls for further research and emphasizes the valuable role of the three-step process of self-objectification in sexual media research and the additional value of focusing on a broad range of distinct sexual behaviors.

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Table 1.*The Means, Standard Deviations and Percentages for the Studied Variables*

| | | | Sample | |
|---|---|---|---|---|
| | Min | Max | *M* | *SD* |
| | | | *% Yes* | *% No* |
| Sexualizing magazines W1 | .61 | 2.70 | 1.05 | .40 |
| Sexualizing gossip magazines W1 | .50 | 2.52 | 1.08 | .60 |
| Sexualizing fashion magazines W1 | .60 | 2.98 | 1.07 | .68 |
| Sexualizing men's magazines W1 | .72 | 3.60 | 1.01 | .61 |
| Internalization W1 | 1 | 5 | 2.52 | .87 |
| Internalization W2 | 1 | 5 | 2.60 | .80 |
| Self-objectification W1 | -9 | 9 | -.81 | 1.64 |
| Self-objectification W2 | -9 | 9 | -.57 | 1.64 |
| Body surveillance W1 | 1 | 5 | 3.10 | .84 |
| Body surveillance W2 | 1 | 5 | 3.15 | .84 |
| French kissing W1 | 0 | 1 | 55.8 | 44.2 |
| French kissing W2 | 0 | 1 | 62.7 | 37.3 |
| French kissing W3 | 0 | 1 | 68.1 | 31.9 |
| Intimate touching W1 | 0 | 1 | 26 | 74 |
| Intimate touching W2 | 0 | 1 | 35.9 | 64.1 |
| Intimate touching W3 | 0 | 1 | 40.5 | 59.5 |
| Sexual intercourse W1 | 0 | 1 | 17.5 | 82.5 |
| Sexual intercourse W2 | 0 | 1 | 25.2 | 74.8 |
| Sexual intercourse W3 | 0 | 1 | 29.5 | 70.5 |

Table 2. *The Zero-Order-Correlations for the Sample*

| | S Mag W1 | Int W1 | Int W2 | SO W1 | SO W2 | BS W1 | BS W2 | Sex W1 | Sex W2 | Sex W3 |
|---|---|---|---|---|---|---|---|---|---|---|
| S Mag W1 | | | | | | | | FK. 17*** | FK .16*** | FK .20*** |
| | 1 | .19*** | .20*** | .24*** | .26*** | .27**** | .24*** | IT .12** | IT .16*** | IT .16*** |
| | | | | | | | | SI .19*** | SI .18*** | SI .17*** |
| Int W1 | | | | | | | | FK .11** | FK .14*** | FK .17*** |
| | | 1 | .62*** | .41*** | .36*** | .56*** | .50*** | IT .09* | IT .12** | IT .09* |
| | | | | | | | | SI .07 | SI .08* | SI .10** |
| Int W2 | | | | | | | | FK .06 | FK .11** | FK .11** |
| | | | 1 | .35*** | .37*** | .48*** | .54*** | IT .07 | IT .11** | IT .09* |
| | | | | | | | | SI .06 | SI .08* | SI .08* |
| SO W1 | | | | | | | | FK .24*** | FK .25*** | FK .26*** |
| | | | | 1 | .71*** | .50*** | .43*** | IT .24*** | IT .23*** | IT .21*** |
| | | | | | | | | SI .22*** | SI .21*** | SI .21*** |
| SO W2 | | | | | | | | FK .20*** | FK .20*** | FK .21**** |
| | | | | | | .47**** | .48**** | | | |
| | | | | | 1 | | | IT .22*** | IT .21*** | IT .21*** |

| | | | | | |
|---|---|---|---|---|---|
| | | | SI .22*** | SI .21*** | SI .22*** |
| BS W1 | | | FK .11*** | FK .14*** | FK .18*** |
| | 1 | .73*** | IT .13*** | IT .12** | IT .12** |
| | | | SI .11** | SI .12*** | SI .12** |
| BS W2 | | | FK .07 | FK .10** | FK .14*** |
| | | 1 | IT .07 | IT .09* | IT .06 |
| | | | SI .06 | SI .06 | SI .05 |
| Sex W1 | | | | FK .75*** | FK .70*** |
| | | | 1 | IT .75*** | IT .68*** |
| | | | | SI .77*** | SI .70*** |
| Sex W2 | | | | | FK .82*** |
| | | | | 1 | IT .84*** |
| | | | | | SI .82*** |
| Sex W3 | | | | | |
| | | | | | 1 |

*Note*: *$p < .05$; **$p < .01$; ***$p < .001$; S Mag = Sexualizing sitcoms, Int = Internalization of appearance ideals, SO = Self-objectification, BS = Body surveillance, Sex = Sexual behavior, i.e., French kissing (FK), Intimate touching (IT) and Sexual intercourse (SI).

*Figure 1.* A model for the hypothesized relationships between the use of sexualizing magazines, internalization, self-objectification, body surveillance and sexual behavior.

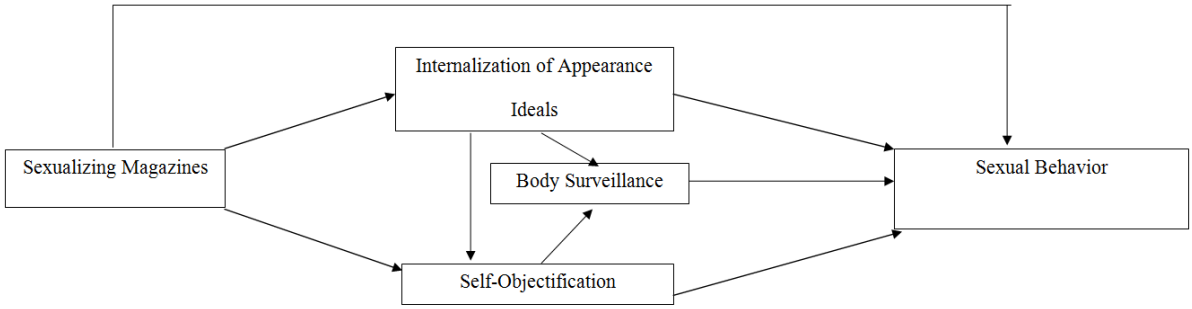
Internalization of Appearance Ideals
Sexualizing Magazines
Body Surveillance
Sexual Behavior
Self-Objectification

*Figure 1.*

*Figure 2.* The structural equation models for the hypothesized relationships between the use of sexualizing magazines, internalization, self-objectification, body surveillance and sexual behaviors. *Note*: All of the paths are significant at $p < .05$. For clarity, the error terms, control variables and measurements are not given. Only standardized values are shown.

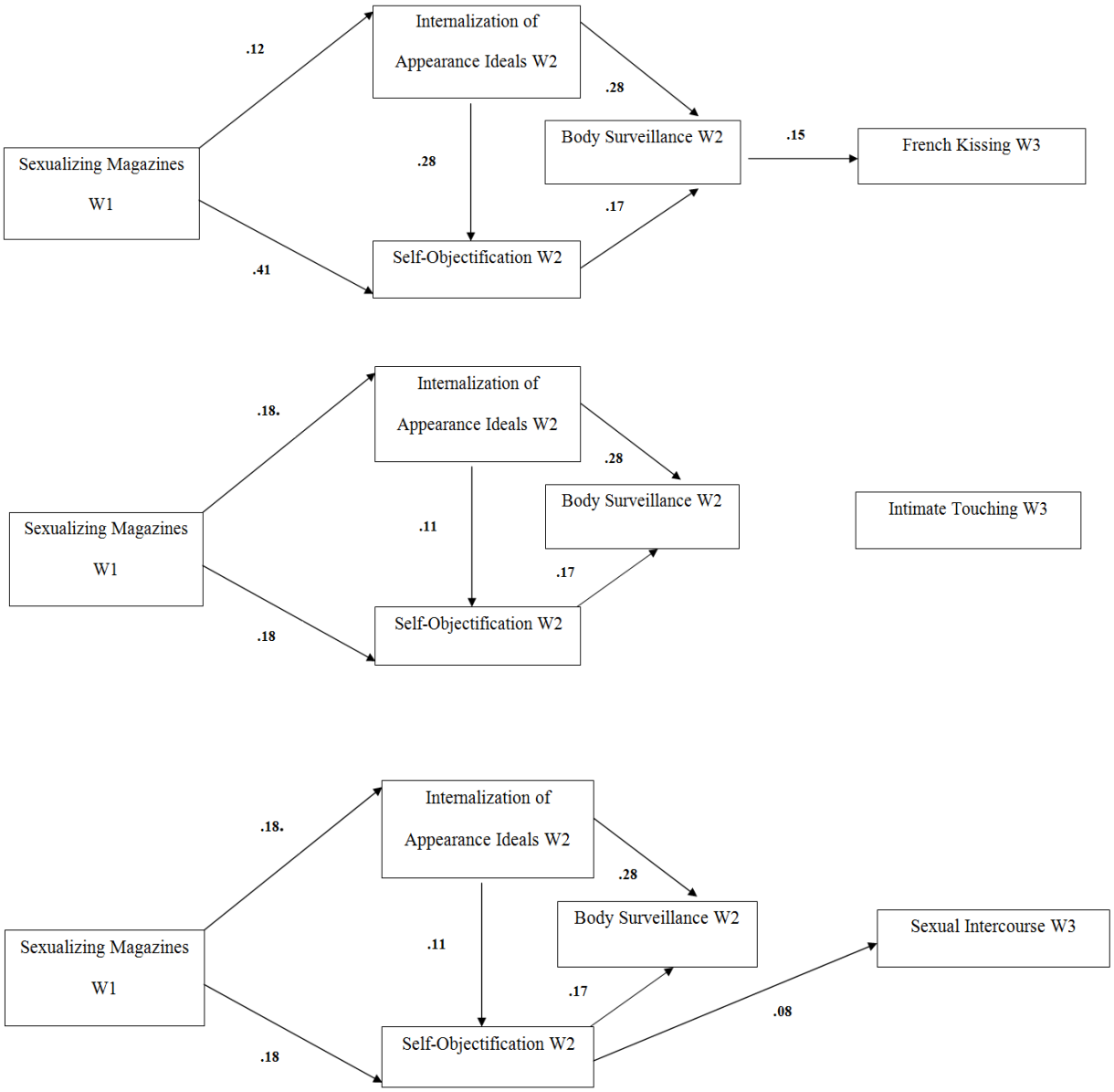
Internalization of Appearance Ideals W2
.12
.28
Body Surveillance W2
.15
French Kissing W3
Sexualizing Magazines W1
.28
.17
.41
Self-Objectification W2
Internalization of Appearance Ideals W2
.18.
.28
Body Surveillance W2
Intimate Touching W3
Sexualizing Magazines W1
.11
.17
.18
Self-Objectification W2
Internalization of Appearance Ideals W2
.18.
.28
Body Surveillance W2
Sexual Intercourse W3
Sexualizing Magazines W1
.11
.17
.08
.18
Self-Objectification W2

*Figure 2.*